Coolidge - Florence Regional Transportation Plan

A Partnership Among the City of Coolidge, Town of Florence, and ADOT

SUMMARY REPORT

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SUMMARY REPORT

This is a Summary Report of the Coolidge-Florence Regional Transportation Study that developed a regional transportation plan for the planning areas of Coolidge and Florence, Arizona. An effective partnership was forged among the City of Coolidge, the Town of Florence, and the Consultant Team to conduct the study. Funding was provided by the two municipalities and the Arizona Department of Transportation (ADOT) in recognition of the regional growth and the need to develop a coordinated multimodal transportation system. In addition, area residents' and stakeholder input was solicited and incorporated in the study through public participation efforts. Complete documentation of the Study is provided in the Final Report.

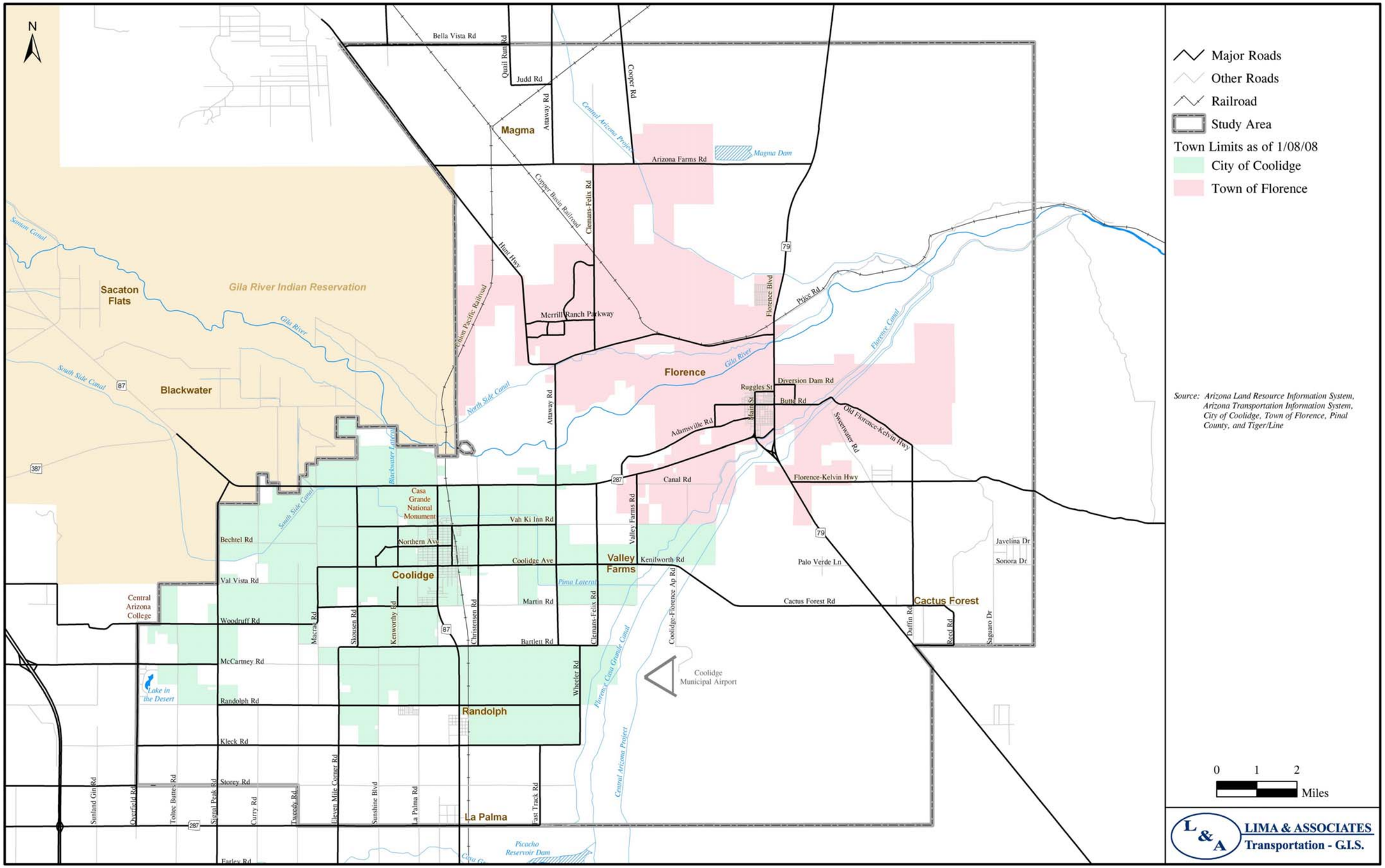
While this study included roadway facilities owned and operated by ADOT within the study area, it is important to recognize that improvements to the state highway system can be made only after in-depth planning and engineering studies are conducted by ADOT, and upon approval of the State Transportation Board. All traffic interchange improvements must be approved by the Federal Highway Administration (FHWA). The recommendations made by this study for improvements on state facilities can serve only as suggestions for further study.

PURPOSE. The purpose of the study has been to develop a 20-year transportation plan and implementation program to guide the City of Coolidge and the Town of Florence in meeting transportation needs into the future. Roadway and multimodal improvements were identified to address deficiencies and needs to improve mobility and safety in the County. The study also identified how and when these improvements should be implemented and funded. This long-range multimodal transportation plan is intended for use in day-to-day programming and funding of transportation improvements. In addition, transportation improvements have been prioritized to maximize project benefits within budget limitations. Funding strategies and sources have been included to aid the communities in pursuing local, regional, state, and federal funding. Figure 1 depicts the study area.

BACKGROUND. The study area is comprised of the combined planning areas of the City of Coolidge and the Town of Florence within the eastern portion of Pinal County approximately midway between the City of Phoenix and City of Tucson (see Figure 1). The combined planning areas extend from east of I-10 to well past SR 79 and from SR 87 to Bella Vista including the places of Valley Farms, Cactus Forest, Randolph, La Palma, and Florence Gardens. The 336 square mile study area is larger than the combined incorporated areas (as of 2004) of the East Valley cities including City of Mesa, Town of Gilbert, City of Chandler, Town of Queen Creek, and City of Apache Junction.

Both communities are experiencing rapid growth. Possible population growth in the study area has been projected in the range of 250,000 to 300,000 persons over the next 20 years. Currently, a Pulte Homes development is underway on the West side of the City of Coolidge, and Anthem at Merrill Ranch on the northwest side of the Town of Florence, which is transforming the landscape to residential use. Other new developments are also underway in the area. In addition, Westcor has signed a contract to construct a regional Shopping Mall in the future on the eastside of the City of Coolidge.

FIGURE 1. COOLIDGE-FLORENCE STUDY AREA

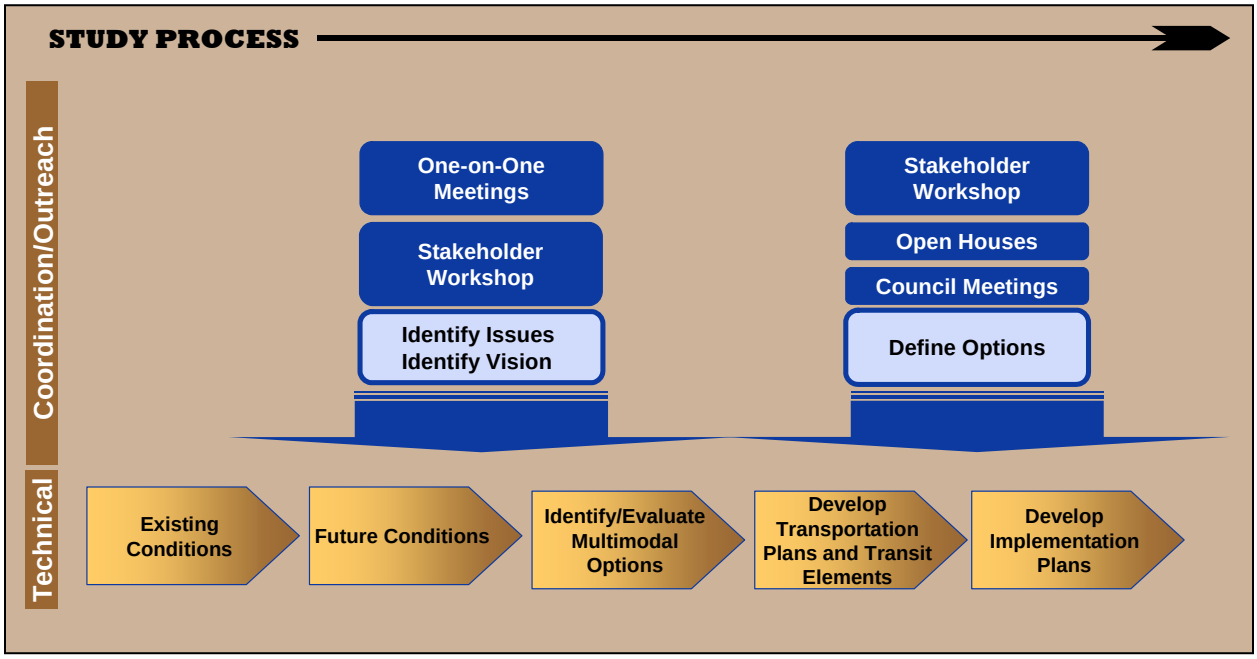


STUDY PROCESS AND PUBLIC INVOLVEMENT. A Technical Advisory Committee (TAC) guided the overall conduct of the study, provided background information, and made technical input to the process. The committee was comprised of representatives from the agencies listed in Table 1. An intensive public participation process was undertaken, including two rounds of stakeholder workshops to identify issues, solicit comments, and receive feedback on the study process and recommendations. The study process is illustrated in Figure 2.

TABLE 1. TECHNICAL ADVISORY COMMITTEE MEMBERS

City of Coolidge:	**ADOT:**
Public Works Department	Transportation Planning Division
Growth Management Department	Public Transportation Division
	Tucson Engineering District
Town of Florence:	Globe Engineering District
Public Works Department	
Planning and Zoning Department	**Pinal County:**
Administration Department	Public Works Department
Gila River Indian Community	**Central Arizona Association of Governments**

FIGURE 2. STUDY PROCESS



The first step of the technical analysis was to analyze the existing conditions and Environmental Justice concerns. Workshops in Coolidge and Florence were held to identify issues and envision components for the transportation plan. Stakeholders included Public Works Department personnel, Coolidge and Florence personnel, elected officials from the City of Coolidge and the Town of Florence, ADOT, CAAG, Pinal County representatives, and citizens.

Future socioeconomic conditions were projected and a traffic forecasting model of the study area was developed to identify future transportation conditions. Next, multimodal transportation options were identified and evaluated. Based on the results of this analysis, a draft transportation plan was developed including a transit element. A second round of stakeholder workshops was held to review the draft transportation plan and identify constraints to the plan. The findings and recommendations of the study were presented to open houses in Coolidge and Florence for review and comment.

Stakeholder Workshops. The first Stakeholder Workshop was held August 9, 2007, at the Council Chambers, Florence Town Hall. The purpose of the meeting was to review the status of the study, present the existing and future demographic and transportation conditions, and obtain input from the stakeholders. The meeting was an open house format with display boards available to be reviewed by participants. Comment cards were available for participants to complete. A brief PowerPoint presentation was given at 4:30 p.m. summarizing the study process, reviewing existing and future demographic and transportation conditions, and discussing the planning approach. The display boards included: 1) Environmental Overview; 2) Land Ownership; 3) Vehicle Crashes; 4) Planned Area Developments; 5) Number of Lanes for Proposed Roadway Network; 6) 2025 Traffic Volumes With or Without the Proposed North-South Freeway; and 7) Draft Florence Land Use Map. Display maps and the PowerPoint presentation were placed on the web sites of both the City of Coolidge and Town of Florence.

The second stakeholder workshop was held from 4:00 p.m. to 6:00 p.m. on December 12, 2007, for the Coolidge-Florence Regional Transportation Study at the City of Coolidge Council Chambers. The purpose of the workshop was to present the draft road and public transportation elements of the regional transportation plan and obtain feedback from the participants. The format of the second workshop was similar to that of the first. Display boards presented included: 1) Study Area; 2) 2025 Traffic Volumes for Alternative 1; 3) Road Element Functional Classification; 4) Road Element Number of Lanes; 5) Public Transportation Element; and 6) Public Transportation Options.

Overview of Open Houses. Two public open houses were held in January 2008 to present the Coolidge-Florence Regional Transportation Plan to the public and obtain feedback on the plan. One Open House was held at the City of Coolidge Council Chambers on January 8 and one was held at the Town of Florence Council Chambers on January 10. Both events took place between 5:00 p.m. and 7:00 p.m. and were advertised in regional newspapers and on the Web sites of both communities.

The format for both open houses included display boards available to be reviewed by participants. Members of the study team were available to answer questions. A brief presentation was given outlining the study process, vision, issues, and presenting the roadway and public transportation elements. The display boards included: 1) Study Area; 2) 2006 Land Ownership; 3) 2025 Traffic Volumes for Alternative 1; 4) Proposed Developments; 5) 2025 Road Functional Classification; 6) 2025 Number of Lanes; 7) 2025 Public Transportation Element; and 8) Public Transportation Options.

Comments received from both stakeholders and the public are summarized in Chapter 2 of the Final Report.

RECOMMENDATIONS. The consultant team recommends the following for the City of Coolidge and the Town of Florence:

Transportation Issues. Many of the roads in the study area are currently owned, operated, and maintained by Pinal County; Municipalities must coordinate with the County in developing a street system.

Road Plan

- Implement new continuous roads and widen existing roadways to provide an adequate level-of-service in the study area.
- Implement a functional classification of 410 miles of major arterials, minor arterials, major collectors, and minor collectors tied to specific design and access criteria.
- Implement access management principles to manage access to adjacent properties.

Roadway Projects

- The Consultant identified a total of over 140 miles of roadway improvements in the Coolidge Planning Area and over 270 miles of roadway improvements in the Florence Planning Area.
- Total cost of the Coolidge area projects is estimated at $899 million, including $638 million for 89.18 miles of major arterial roadways, $246 million for 46.70 miles of minor arterial roadways, and $15 million for 4.28 miles of major collector roadways.
- Total cost of the Florence area projects is estimated at $1.7 billion, including $834 million for 117.94 miles of major arterial roadways, $750 million for 117.40 miles of minor arterial roadways, $62 million for 14.06 miles of major collector roadways, $11 million for 3.12 miles of minor collector roadways, and $50 million for 18.34 miles of frontage roads.
- Over 32 miles of major arterial roadway projects in the Coolidge planning area estimated to cost a total of $237 million were identified as high-priority projects.
- Over 45 miles of major arterial roadway projects in the Florence planning area estimated to cost a total of $313 million were identified as high-priority projects.
- Improvement of Attaway Road between Hunt Highway and Quail Run Lane, a minor arterial in the Florence Planning Area, which is estimated to cost $19.4 million, is also considered a high-priority project.

Public Transportation

- The City of Coolidge and the Town of Florence should proactively support the Pinal Rides Pilot Program by participating on the Advisory Council and providing funding.
- The City of Coolidge and the Town of Florence should communicate and coordinate with organizations and agencies that are evaluating and/or advocating inter-regional transit service options affecting the County.
- The City of Coolidge and the Town of Florence should consider development of transit oriented design (TOD) overlays that could be implemented along identified future transit corridors.

- The City of Coolidge and the Town of Florence should continue to present short- and long-range plans to ADOT Public Transportation Division.
- The City of Coolidge should continue to evaluate the operation of the Cotton Express and plan for service expansion as population growth and development warrant.
- The Town of Florence should conduct a Transit Feasibility and Implementation Study to identify current and future public transportation needs within the town as well as demographic thresholds for implementing future services.
- The Town of Florence should hire a Transportation Coordinator, when needed.
- The Town of Florence should appoint a volunteer Transit Advisory Committee to assist the Town in identifying the desirable attributes of the coordinator position and to work with the coordinator after his or her selection.

FUTURE SOCIOECONOMIC AND TRANSPORTATION CONDITIONS. This section summarizes the analysis of the 2025 socioeconomic and transportation conditions for the Coolidge-Florence transportation study area, and the analysis of alternative road networks. First, the 2025 socioeconomic projections area are presented and analyzed. The methods to forecast future traffic and road deficiencies are then described. Next, the conditions of the 2025 existing street network with the 2025 growth projections are analyzed. Sections follow summarizing the analysis of alternative street networks to address roadway deficiencies and spatial allocation of the socioeconomic data among Transportation Analysis Zones (TAZs) defined in the study area.

Methodology for Developing Future Socioeconomic Data. The following steps were taken to estimate 2025 socioeconomic data including dwelling units, population, and number of employees.

1. The study area was subdivided into TAZs representing distinct geographical areas. A TAZ is generally bounded by either the roads or other geographic boundaries such as the Gila River. Estimated households, population, and employees are allocated to each TAZ within the study area. A map showing the TAZs in the study area is included in the Final Report.
2. The Central Arizona Association of Governments (CAAG) Planned Area Development database for proposed residential and commercial acres was reviewed.
3. Coordinated with the Town of Florence and City of Coolidge to identify potential residential and commercial growth areas and the timing of these areas.
4. Reviewed locations of planned infrastructure (power, sewer, water).
5. Reviewed the housing permit history in the study area.
6. Reviewed the amount and timing of housing development and commercial and office development growth in urban areas in the Phoenix and Tucson area.
7. Estimated 2025 dwelling units in each TAZ.
8. Estimated employees among retail, office, industrial, government, and other types of employment and allocated to TAZs.

Summary of 2025 Socioeconomic Data. Table 2 presents a summary of the socioeconomic projections for the year 2025. Population in the study area is growing very rapidly. The estimated total 2005 population is expected to grow to a projected 2025 population of approximately 337,500

TABLE 2. SUMMARY OF 2025 SOCIOECONOMIC DATA

Area	2005				2025			
	DUS	Pop.	Emp	Emp/ Pop	DUS	Pop	Emp	Emp/ Pop
Coolidge Planning Area	4,223	12,275	3,897	0.32	25,608	72,153	22,269	0.31
Florence Planning Area	3,494	8,662	5,553	0.64	41,094	113,942	57,241	0.50
County Portion	6,635	14,723	5,247	0.36	57,086	151,419	54,425	0.36
Total Study Area	**14,352**	**35,660**	**14,697**	**0.41**	**123,788**	**337,514**	**133,935**	**0.40**

Source: Elliot Pollack & Company, Lima & Associates
DU=dwelling units, Pop=Population, Emp=Number of employees, Emp/Pop=Ration of employees to population
*Population does not include prison population

residents, almost an 846 percent increase—42 percent yearly average growth rate. The 2025 population in the study area is allocated among the jurisdictions as follows:

- 114,000 in the Florence Metropolitan Planning Area
- 72,100 in the Coolidge Metropolitan Planning Area
- 151,400 in the Pinal County and Casa Grande portions of the study area.

Employment in the study area is also projected to grow rapidly to 134,000 employees, approximately 811 percent increase. This is a 40 percent yearly average growth rate.

The high projected growth rates for Coolidge-Florence compare to other high growth areas in the Phoenix metropolitan area and in other areas of Pinal County. For example, the population in the Town of Buckeye in Maricopa County grew from approximately 8,500 residents in the year 2000 to an estimated population of 31,800 residents in 2006—45.6 percent average yearly growth rate. The City of Maricopa in Pinal County grew from approximately 1,500 residents in the year 2000 to an estimated population of 25,800 residents in 2006—274 percent average yearly growth rate.

Traffic Forecasting Process Overview. A traffic forecasting model was developed and validated for the Coolidge-Florence Regional Transportation Study area to estimated future traffic volumes. The model was developed using the TransCAD transportation forecasting software and was calibrated using the year 2005 transportation network and estimated 2005 socioeconomic data. The transportation planning model is a representation of the study area transportation facilities and the travel patterns using these facilities. The traffic model contains inventories of the 2005 roadway facilities and of residential and non-residential units by traffic analysis zones.

In general, the traffic model process consists of several steps including estimating the number of daily vehicle trips by TAZ from the socioeconomic inventory, distribution of vehicle trips by TAZ, and then assigning the vehicle trips to the street network. The traffic model is calibrated by comparing the daily traffic volumes produced by the model with current daily traffic counts. When the model matches the traffic counts within acceptable ranges of error the model can then be used to test future year scenarios. These scenarios may contain changes in numbers of housing units, employment centers, travel behavior patterns, or roadway improvements. The transportation planner or engineer, using the traffic-forecasting model can project future traffic volumes, which in turn can aid in making planning and project programming decisions.

The transportation modeling process included the following steps:

- Development of 2005 transportation roadway network.
- Determination of 2005 land use data working with the City of Coolidge and Town of Florence.
- Generation of daily vehicle trips in the trip generation phase.
- Distribution of vehicle trips in the trip distribution phase - geographical distribution of vehicle trips between origin and destination zones.
- Assigning vehicle trips to the 2005 road network in the trip assignment phase.

The next step in the traffic forecasting process was to apply the calibrated model to forecast 2025 traffic volumes. For this, the 2025 socioeconomic TAZ data was used to forecast the 2025 daily traffic volumes.

Method to Identify Road Deficiencies. Roadway deficiencies were identified using traffic level of service. Level of service (LOS) is a qualitative measure of traffic operations stated in terms of factors such as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. Level of service ranges from LOS A to LOS F, where LOS A represents unrestricted traffic flow and LOS F represents a severely congested traffic condition. In an urban area, the acceptable level of service ranges between LOS C and D.

Table 3 presents the planning criteria used for determining level of service based on volume-to-capacity ratio. As the ratio of daily traffic volume increases, the level of service experienced by drivers deteriorates until it exceeds the road capacity and bottle necks occur.

TABLE 3. LEVEL OF SERVICE CRITERIA

LOS	Maximum V/C
A	0.29
B	0.54
C	0.75
D	0.90
E	1.00
F	>1.00

Source: Transportation Research Board, *Highway Capacity Manual*

PERFORMANCE OF 2005 NETWORK. The Coolidge-Florence TransCAD travel demand model was used to estimate 2025 daily traffic volumes on the existing road network assuming the projected 2025 socioeconomic conditions. Virtually all the roadways are at a level of service F, indicating complete gridlock on the existing system if the study area grows as expected and no roadway improvements are made. An exhibit depicting these findings is included in Chapter 6 of the Final Report.

PERFORMANCE OF 2025 ALTERNATIVE NETWORKS. In coordination with the Technical Advisory Committee (TAC), alternative 2025 road networks were identified to meet the

future travel demand. Beginning with a Base 2025 Road Network, alternative road networks evolved as alternatives were analyzed and as changes were made to the Florence and Coolidge General Plans. The following sections describe alternative networks and the results of the analysis of those alternatives.

Base 2025 Road Network. As noted above, a Base 2025 Street Network was developed in coordination with the TAC. The network was developed based on the following information:

- Coolidge General Plan Land Use Plan
- Florence General Plan Land Use Plan
- Development plans in both Florence and Coolidge
- Regionally Significant Routes for Safety and Mobility
- Forecasted 2025 traffic volumes in the study area

The Base 2025 Network includes new roadways, improvements to existing roadways, and the proposed North-South Freeway Corridor. Figures illustrating the number of lanes and the level of service on the Base 2025 network with the 2025 socioeconomic numbers are included in the Final Report.

Base 2025 Road Network Without The North-South Freeway Corridor. In order to illustrate the impact of the North-South Freeway Corridor in the region, daily traffic volumes were estimated on the Base 2025 Street Network without the North-South Freeway Corridor. A Figure showing the level of service on the streets without the North-South Freeway Corridor is also included in the Final Report.

2025 Alternative Road Network. The Base 2025 Road Network was modified to reflect changes in the road network of the Florence land use plan and evaluated by the Consultant. A figure illustrating the level of service on the alternative road network is included in the Final Report.

North-South Freeway Terminated at SR 287. The Alternative Network was modified to analyze the impact of terminating the North-South Freeway Corridor at SR 287. The impacts of terminating the North-South Freeway Corridor at SR 287 include the following:

- Increase traffic volumes on SR 287 west of the North-South Corridor.
- Increase traffic volumes on SR 87 south of the North-South Corridor.

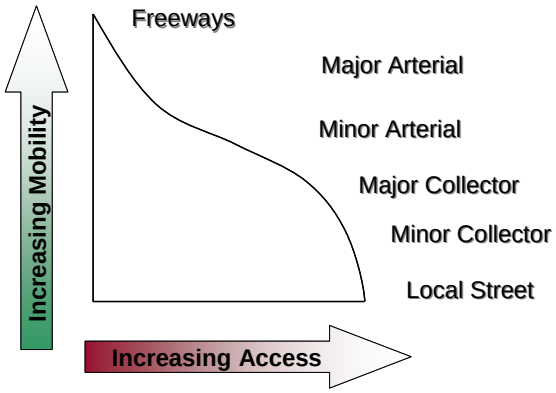
A figure illustrating these impacts is also presented in the Final Report.

RECOMMENDED TRANSPORTATION PLAN - ROADWAY ELEMENT. The analysis of the Base and Alternative 2025 Networks led to the identification and prioritization of projects to be recommended in the Roadway Element of the Coolidge-Florence Regional Transportation Plan, which is summarized in this section. First, the concept of a road functional classification is described and a recommended functional classification for the regional plan is presented. The number of recommended lanes for the regional road network is presented. Next, the concept of access management is discussed

and recommended road design and access management principles are presented. Design and access criteria are then presented.

Road Functional Classification System. The road functional classification system is based on mobility, access to adjacent land uses, and continuity of the street network. Figure 3 illustrates the relationship of mobility and access for various categories of road functional classification. Roads are classified by function, mobility, and access. The functional classification system for the Coolidge-Florence Region includes the following classifications: Freeway, Major Arterial, Minor Arterial, Major and Minor Collector, and local streets.

FIGURE 3. FUNCTIONAL CLASSIFICATION SYSTEM



The following describes the characteristics of the street classifications.

Freeways provide the highest level of mobility by limiting access to grade-separated interchanges. Freeways do not provide direct access to adjacent properties. Interstate 10 is the only freeway in the vicinity of the study area. A North-South (N-S) freeway corridor has been identified from Apache Junction to Coolidge through the study area. A study to determine alignment of this potential freeway will begin in 2008. No funding has been identified for the purchase of right-of-way or for the construction of a North-South freeway.

Principal/Major Arterials provide a high level of mobility and are generally six-lane facilities, located on the one-mile grid, serving major traffic within the region connecting neighborhoods and business centers. Examples of proposed Principal/Major Arterials include: Hunt Highway in Florence and Christensen Road in Coolidge.

Minor Arterials serve similar circulation needs as Principal Arterials but are typically four-lane roadways. Examples of proposed Minor Arterials include: Butte Road in Florence and Kenilworth Road in Coolidge.

Major Collectors can be configured as a four-lane roadway or as a two-lane road with a center turn-lane. Examples of proposed Major Collectors include: Diversion Dam Road in Florence and Northern Avenue in Coolidge.

Minor Collectors are two-lane roads with no center turn-lane. Major and Minor Collectors provide internal circulation within neighborhoods providing connections to the arterial road system. The establishment of the collector road system is part of the ongoing development activity. Collectors have low access control as they provide connections to the local roadways accessing homes and businesses. Speed limits are lowest for collector roads, and should have lower traffic volumes than larger arterials and expressways. Examples of proposed Minor Collectors include: Ranchview Road and Bowling Rd in Florence.

Recommended Road Functional Classification. Figure 4 presents the recommended functional road classification and Figure 5 illustrates the proposed number of lanes. Table 4 presents the road mileage by functional classification.

Although the figures illustrating the functional classification and number and lanes include state highways, it is important to note that the Arizona Department of Transportation (ADOT) has the responsibility to determine the improvements on state highways:

> *While this study included roadway facilities owned and operated by ADOT within the study area, it is important to recognize that improvements to the state highway system can be made only after in-depth planning and engineering studies are conducted by ADOT, and upon approval of the State Transportation Board. All traffic interchange improvements must be approved by the Federal Highway Administration (FHWA). The recommendations made by this study for improvements on state facilities can serve only as suggestions for further study.*

ACCESS MANAGEMENT

Need for Access Management. The purpose of major transportation corridors is to provide for the safe and efficient movement of people and goods at a high level of service. If access to these corridors is limited, then safety and mobility will be maintained along the corridors. However, if access to adjacent property is not limited and adjacent property develops, the addition of traffic signals and curb cuts often has an adverse effect on mobility and safety. As land is developed along transportation corridors, vehicle access to property adjacent to the corridor is often achieved directly to and from the transportation corridor. As a result, more trips are forced onto the corridor due to insufficient internal access systems serving these land use activities. As traffic congestion increases, the level of service provided by the major transportation corridor decreases. In addition, crashes along such a corridor generally increase due to the large number of turning and other conflicts along the corridor.

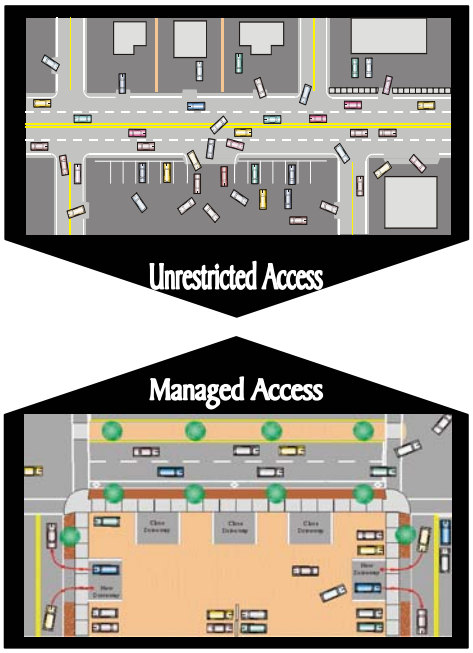


FIGURE 4. RECOMMENDED FUNCTIONAL ROAD CLASSIFICATION

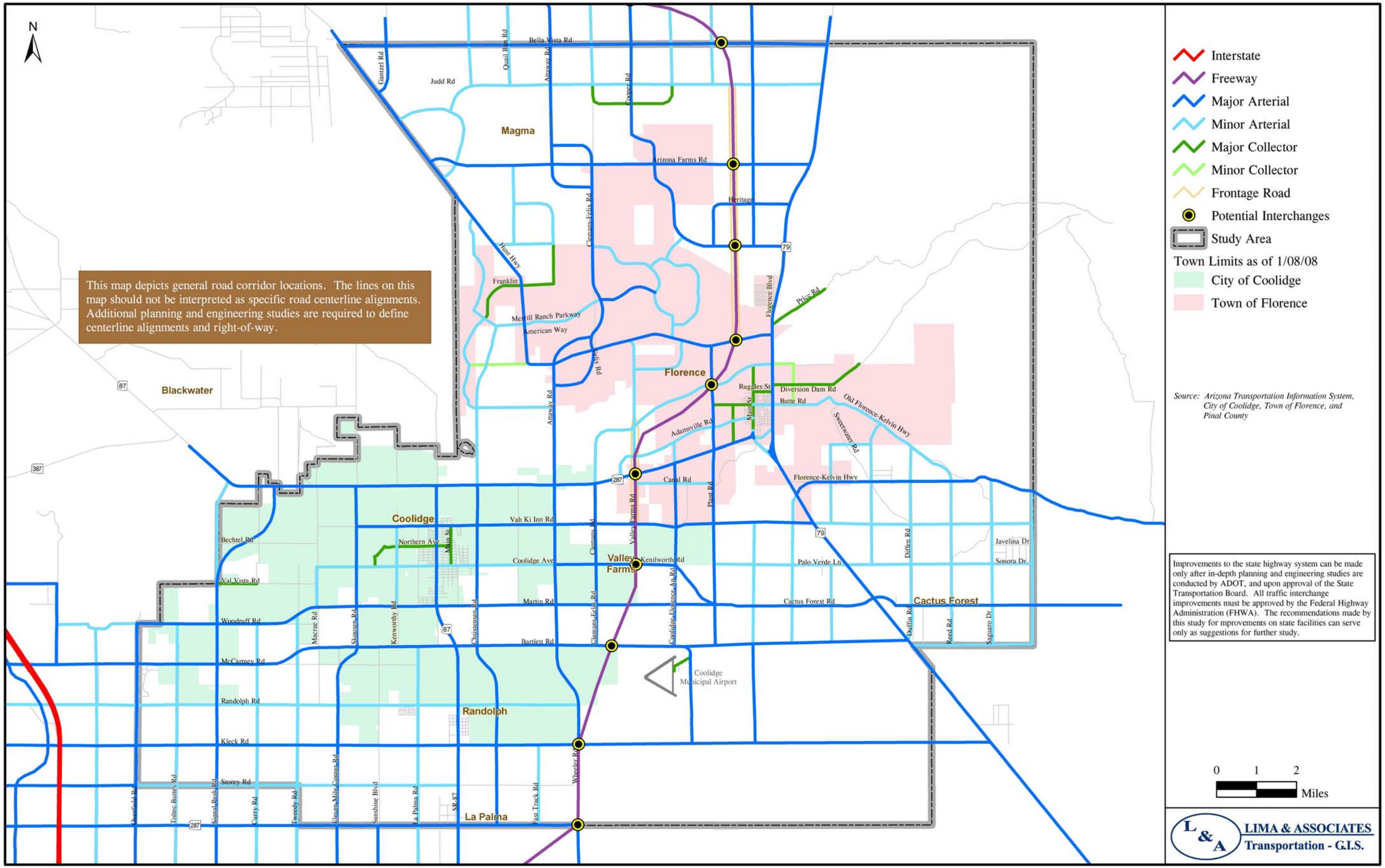


FIGURE 5. 2025 NUMBER OF LANES MAP

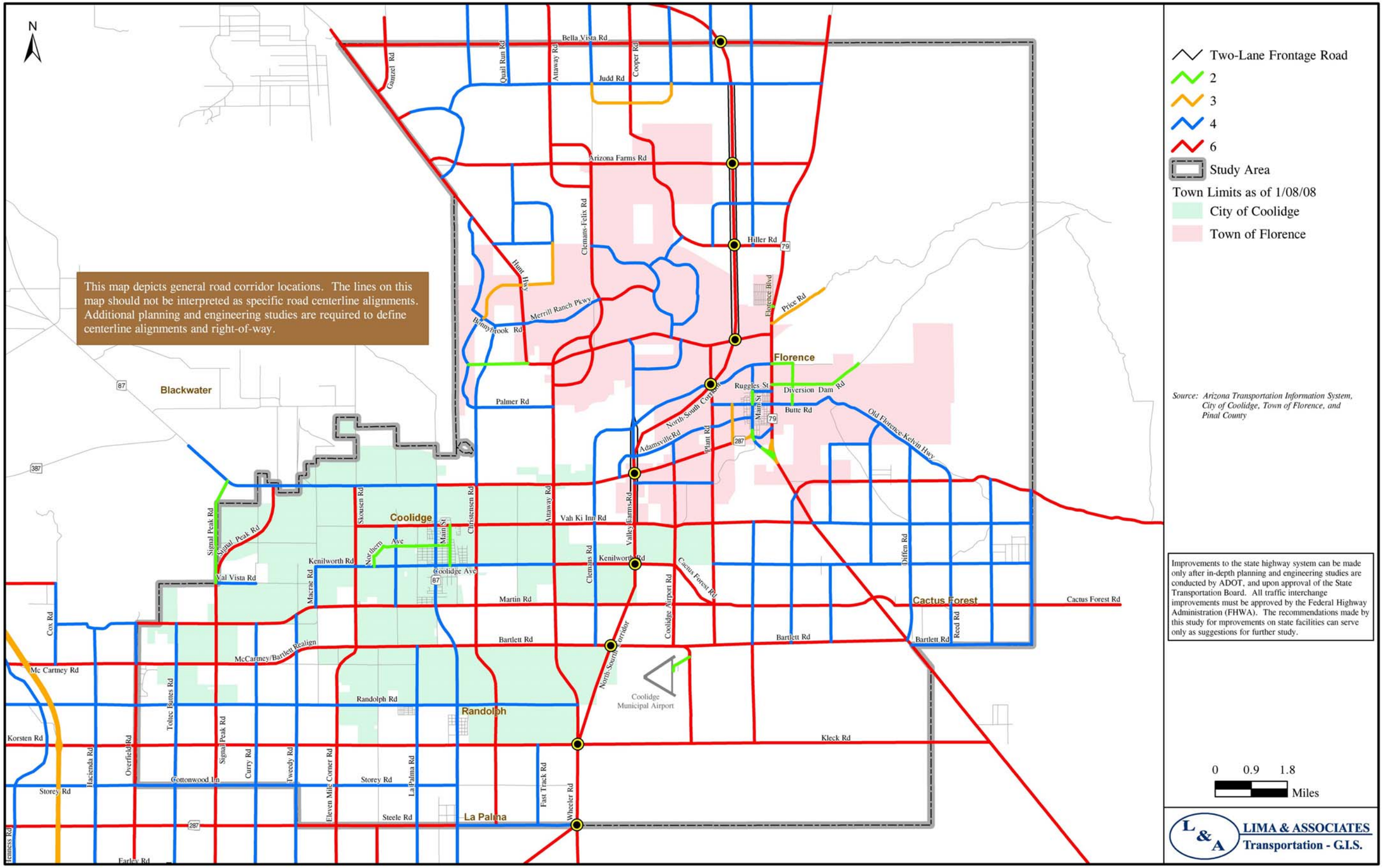


TABLE 4. ROAD MILEAGE BY FUNCTIONAL CLASSIFICATION

Functional Classification	Road Mileage	
	Coolidge Planning Area	Florence Planning Area
Major Arterial	89	118
Minor Arterial	47	117
Major Collector	4	14
Minor Collector	0	3
Frontage	0	18
Total	**140**	**270**

What is Access Management? One way to minimize the adverse impact of increased access to adjacent property is to apply access management techniques along transportation corridors. According to the Federal Highway Administration (FHWA) access management is:

> *The process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed.*

In practical terms this process requires the regulation of vehicular access to public highways from adjoining property in order to limit the number of access points to a roadway, and, therefore; to reduce the number of potential conflict points among the users of the roadway.

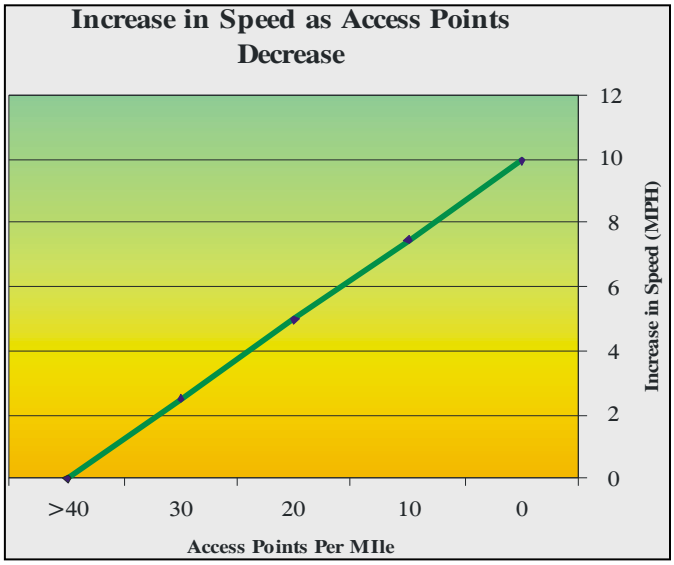
- Access management deals with the traffic problems caused by unmanaged development before they occur.
- Access management addresses how land is accessed along arterials.
- Access management focuses on mitigating traffic problems arising from development and increased traffic volume traveling to the new activity centers.
- Access management calls upon local planning and zoning to address overall patterns of growth and the aesthetic issues arising from development.

Access management is the use of techniques by state and local governments to improve the access to highways and local roads. The purpose of these techniques is to improve travel time and improve safety:

- Increase spacing of intersections and interchanges to improve movement and traffic flow.
- Reduce the number of driveways to avoid conflict points and reduce accidents.
- Use left- and right-turn lanes to separate traffic movements, improving both traffic flow and safety.
- Apply median treatments including two-way left-turn lanes and raised medians that allow drivers to safely turn off of the highway.
- Use frontage and backage roads that provide for safer and easier access to businesses and local roadways.
- Implement land use policies that regulate types of land use conducive to the highway environment.

What are the Benefits of Access Management? The primary benefits of access management are:

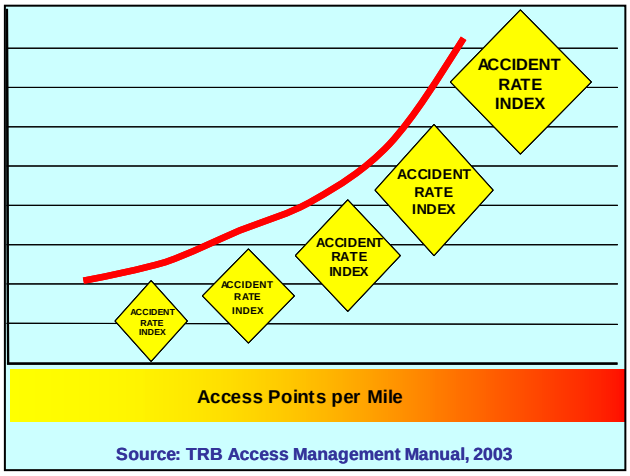
- overall reduced travel time
- reduced vehicle crashes
- reduced travel time of customers to businesses



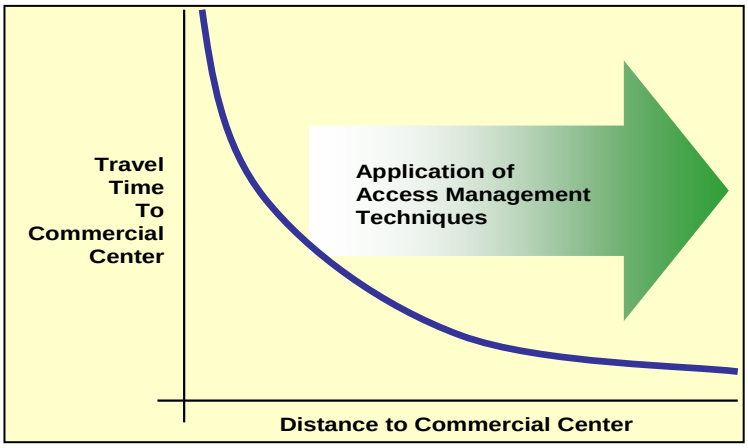
The benefits of access management are well documented in the professional literature including the *TRB Access Management Manual*, *NCHRP Report 420, Impacts of Access Management Techniques* and other reports.

Some of the most important access management techniques relate to the frequency of driveways and intersections and the uniformity of traffic signal spacing. Travel time has been shown to decrease significantly as speed increases with the reduction in the number of driveway and intersection access points. The uniform and increased spacing of traffic signals will also increase travel speeds.

Many studies have shown that crash rates increase with greater frequency of driveways and intersections. More driveways and intersections mean more conflicts between vehicles and also between vehicles and pedestrians. Crashes can be reduced significantly with fewer driveways and intersections.



One of the complaints about access management comes from businesses concerned about restricting access to their enterprises. However, studies have shown that the application of access management techniques reduce the travel time from residential areas to commercial areas and thereby increases the overall market area for businesses. The reduction in the number of access points ensures safer access to business. The positive impact of access management on businesses is documented in the FHWA brochure: *Safe Access is Good For Business*. The brochure and accompanying CD includes support from owners of businesses that were in opposition before access management techniques were applied but in support after the techniques were in effect.



Access Management Techniques. Access management techniques can be grouped into two broad categories: land use and technical tools. Individual techniques within these categories are listed below. Appendix B describes the individual techniques in more detail.

Land use and Development Techniques

- Acquisition of Access Rights
- Dedication and Exactions
- Interim Use Allowances
- Purchase of Development Rights
- Transfer of Development Rights
- Land Development Regulation
- Flexible of Cluster Zoning
- Overlay Zones
- Subdivision Regulations and Site Plan Review
- Zoning Regulation

Technical Tools

- Driveway Consolidation
- Driveway control
- Right-in/Right-out
- Joint Driveway/Cross-Access
- Raised Medians
- Alternative Access Ways
- Frontage and Backage Roads
- Retrofitting Techniques

ROAD DESIGN AND ACCESS CRITERIA. Recommended Access Management Principles include:

- **Primary Access.** For sites that have frontage on two streets, primary access should be onto the minor street.

- **Minimize Access Points.** Subdivisions and sites should be designed to minimize the number of access points. A maximum of two driveway entrances are permitted.

- **Cross Access.** Where new development adjoins other similarly zoned property or compatible land uses, a cross access easement may be required to permit vehicular movement between the parcels and reduce the number of access points required onto the adjacent public street. This may be required regardless of the development status of the adjoining property, unless the cross access is determined to be unfeasible.

Table 5 presents the proposed design and access criteria for the roadway classifications. Appendix C in the Final Report presents the specific street design and access criteria roadway classifications for the Town of Florence and Appendix D in the Final Report presents the street cross sections for the City of Coolidge. **Note that the criteria presented in the table are minimum spacing needs and that it is recommended that longer spacing intervals be provided between intersections and between driveways.**

PUBLIC TRANSPORTATION PLAN. This section suggests and describes potential services, facilities, and equipment and presents the findings of an estimation of 2030 demand for intercity transit in the City of Coolidge and the Town of Florence. Federal, State, and local sources of transit funding are summarized in detail in the Final Report.

TABLE 5. MINIMUM ROAD DESIGN AND ACCESS CRITERIA

Criteria	Functional Classification					
	Freeway	**Principal/Major Arterial**	**Minor Arterial**	**Major Collector**	**Minor Collector**	**Local Street**
Road Purpose	Mobility	Mobility	Mobility/Access	Access/Mobility	Access	Access
Planning Average Daily Traffic	>55,000	45,000-55,000	30,000	10,000	8,000	1,000
Design Standards						
Design Speed	75 mph	55 mph	45 mph	35 mph	35 mph	20 mph
Right-of-Way Width	300'+	130'-150'	110'	80'	60'	50'-60'
Median	Divided	Divided	Divided	TWLT	TWLT	N/A
Number of Lanes	4 and Greater	6	4-5	2-4	2-3	2
Left-turn Lanes	NA	At all locations where permitted	At all locations where permitted	At all locations where permitted	At all locations where permitted	NA
Right-turn Lanes	NA	At all locations where permitted and warranted	At all locations where permitted and warranted	At all locations where permitted and warranted	At all locations where permitted and warranted	NA
Access Management Guidelines						
Public Access	Grade-Separated Interchanges Only	1/8-1/2mile	1/8-1/4 mile	1/8-1/4 mile	1/8 mile	Residential street
Property Access	None	Rt. in/Rt. Out Full access where approved	Rt. in/Rt. Out Full access where approved	Full access where approved	Full access where approved	Not Restricted
Traffic Signal Spacing	NA	Mile and ½ mile locations, Fully coordinated and progressed where warranted	½ mile locations, ¼ mile locations where warranted	½ mile locations. ¼ mile locations where warranted	NA	NA
Typical Traffic Control	NA	Signalized, two-way stop	Signalized, two-way stop	Signalized, two-way stop	Signalized, two-way stop	Stop Control
Parking	Prohibited	Prohibited	Prohibited	Restricted	Restricted	Allowed
Alternative Modes						
Transit	Potential HOV Lane	Bus pull-outs and queue jumpers where warranted	Bus pull-outs and queue jumpers where warranted	NA	NA	NA
Bike Lanes	No	Yes	Yes	Yes	Yes	No
Sidewalk (both sides)	None	6'	6'	5'	5'	3' - 4'

TWTL – Two-way Turning Lanes

Transportation Demand Management - consists of a wide range of programs and services that enable people to get around without driving alone. Included are alternative transportation modes such as carpooling, vanpooling, transit, bicycling, and walking, as well as programs that alleviate traffic and parking problems such as telecommuting, variable work hours, and parking management.

Transportation Demand Management can address the needs of those traveling long distances with rideshare options such as vanpools and carpools. These types of services are vital in moving people around large areas, whether for work or for traveling to regional centers that have special services, medical facilities, or retail stores.

Rideshare Matching Programs - provide service by identifying people who live and work close to each other and then facilitate carpooling and vanpooling. Matching services can pair full-time partners, or simply someone to call in an emergency. Rideshare matching can be done by individual employers or on a community-wide basis. In addition to commute trips, travelers can be matched with others participating in the same extracurricular school function, medical-related trip, shopping trip, or community activity.

Rideshare matching is typically done through a computerized system. A variety of vendors have created inexpensive, effective software that makes this process easy to use. Rideshare services can also be offered on-line.

Two common forms of ridesharing are carpools and vanpools. Carpool participation is higher than the national average in rural Arizona, suggesting that a potential for developing additional carpools in the area exists.

Arizona Rides - is a statewide effort to coordinate provision of human services transportation within counties or regions of counties to increase efficiency, limit service duplication and confusion, and save costs. Arizona Rides was initiated in response to the federal "United We Ride" program established in 2004. "Pinal Rides," a pilot project of the program, funded a study of the concept in Central Pinal County. The Final Report of the pilot project was published in December 2005. Recommendations included the establishment of a transit coordinating council for the study area and the implementation of service along two regional corridors.

Types of Transit Vehicles - A number of roadway-based and fixed-guideway forms of transit service exist, including bus service, light rail, commuter rail, subways, and monorail. Six modes of transit have been identified as likely candidates for eventual implementation in the City of Coolidge and the Town of Florence:

- ✓ Dial-A-Ride and Paratransit Services
- ✓ Regional Bus Service
- ✓ Commuter Rail Service
- ✓ Deviated Fixed Route Service
- ✓ Regional Rail Service
- ✓ Excursion Rail Service

The specific features of the two types of bus services are detailed in the Final Report. The concept for excursion rail service is also discussed in the Final Report.

Future Transit Needs and Service Thresholds. Concentrations of population within an area suggest where commute trips are likely to originate during the morning peak travel period, and concentrations of employment function as "attractors" where such trips are likely to terminate. In the

afternoon, the roles are reversed: Trips originate in areas where employment is concentrated and terminate in residential areas. As Coolidge and Florence develop and increase in total population and in population density, significant areas in each community will likely meet or exceed demographic thresholds empirically determined to warrant the introduction or enhancement of transit service.

Transit Service Threshold Methodology. Traditionally, transit thresholds are based on residential densities alone. However, the application of such thresholds to residential densities shown on a TAZ level fails to consider the variations in density within the TAZ itself. To compensate for this observation, the consultant decided to apply the thresholds to the sum of the residential and employment densities within a TAZ rather than to the residential densities alone. A threshold scenario was developed for application to the TAZ array. The threshold levels for the different types of transit service were calculated from data presented in the MAG *High Capacity Transit Study*.

The threshold levels presented in Table 6 were applied to a map of the study area, which is shown in the Final Report, using the forecasted 2025 combined population and employment for each TAZ.

TABLE 6. MINIMUM CONSOLIDATED RESIDENTIAL AND EMPLOYMENT DENSITIES FOR VARIOUS TYPES OF TRANSIT SERVICES

Transit Service Type	Persons/Sq Mile*
Bus–minimum service	4,500
Bus–intermediate service	7,780
Bus–frequent service	16,670
Light rail	10,000
Commuter Rail	3,328

* Calculated from Maricopa Association of Governments *High Capacity Transit Study*, 2003
Bus minimum service = 1/2 mi between routes, 20 buses/day
Bus intermediate service = 1/2 mi between routes, 40 buses/day
Bus frequent service = 1/2 mi between routes, 120 buses/day
Commuter rail = 20 Trains/day on existing track
Light rail = 5 min. peak headways

These threshold numbers have been used in a number of transit studies nationwide including the *High Capacity Transit Study* conducted in 2003 for the Maricopa Association of Governments. Note that the "bus-minimum service" category refers to standard fixed route bus services mostly operated in larger metropolitan areas. Deviated fixed route services and dial-a-ride services, such as the Cotton Express currently operated by the City of Coolidge, sometimes operate in areas that do not meet the minimum density threshold of 4,500 persons per square mile, as do peak-hour commuter bus or van operations. Brief summaries of the different types of transit services and vehicles will be given in the following section.

By 2025, portions of Coolidge and Florence will exhibit significant combined population and employment densities. Just one-half square mile of Florence south of Hunt Highway and west of downtown and two quarter square mile areas of central Coolidge are forecasted to have combined densities of more than 11,752 persons per square mile. However areas distributed throughout the study area totaling approximately four square miles are projected to have densities of 7,601 persons per

square mile or more. A total of over twelve square miles are forecasted to have combined densities of 5,068 or more persons per square mile. Much of the remainder of the portions of the study area forecasted to be urbanized by 2025 will have densities of more than 2,863 persons per square mile.

Draft 2025 transit service options suggested by this analysis are shown in Figure 7. The two types of transit service suggested by the forecasted densities are minimum bus service and commuter rail. The existence throughout the future urbanized portions of the study area of regions with densities of 2,863 persons per square mile or more is close enough to the commuter rail threshold of 3,328 persons per square mile that implementation of commuter rail in the region by 2025 would be warranted, assuming that sufficient concentrations of employment within rail-served areas such as Central Phoenix, Central Tucson, and the Phoenix-Mesa Gateway area will exist.

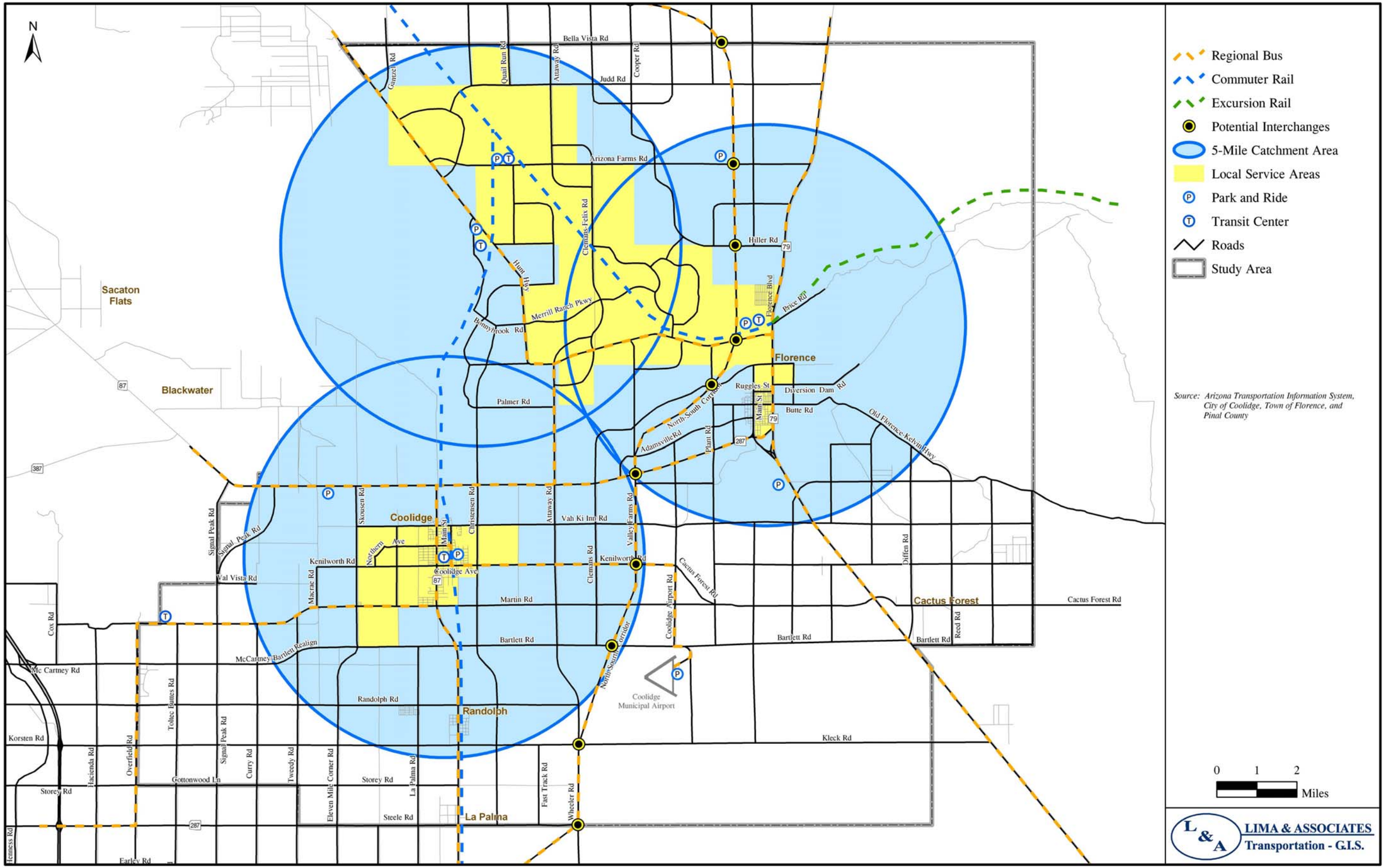
Portions of Figure 7 where densities suggest local minimum bus service are highlighted in yellow. Such service could begin as an expansion of the existing Cotton Express service in Coolidge and the implementation of a similar service in Florence. As demand warrants, a network of fixed-route services, with complementary paratransit services, could be developed in these areas.

The following services would address future population growth and levels of travel demand within the Coolidge and Florence areas and between these communities and the metropolitan Phoenix and Tucson areas. These alternatives include:

- Expansion of the Cotton Express local dial-a-ride and deviated fixed route service areas within the City of Coolidge
- Introduction of a service similar to the Cotton Express within the Town of Florence
- Regional bus service connecting Coolidge, Florence, Coolidge Municipal Airport, Central Arizona College, Casa Grande, and Eloy
- Limited Stop commuter bus serving Coolidge, Florence, Queen Creek, Gilbert, and Mesa
- Limited Stop commuter bus serving Florence, Coolidge, Chandler, Tempe, and Phoenix
- Limited Stop commuter bus serving Coolidge, Florence, Oro Valley, and Tucson
- Limited Stop commuter bus serving Florence, Coolidge, Randolph, Eloy, Marana, and Tucson
- Commuter rail serving Coolidge, Queen Creek, Gilbert, Mesa, Tempe, and Phoenix
- Commuter rail serving Florence, Queen Creek, Gilbert, Mesa, Tempe, and Phoenix
- Regional rail service between Phoenix, Tempe, Mesa, Queen Creek, Coolidge, Picacho (Eloy), Marana, and Tucson
- An excursion rail operation on the Copper Basin Railway from Florence east through the scenic Gila Canyon area

Figure 6 also recommends the locations for transit centers and park-and-ride locations. The 10-mile diameter circles depict the "catchment areas" for the commuter rail service. These are intended to incorporate the areas from where a commuting motorist could reach the rail station at the transit center in the center of the circle within 10 minutes. Locations of transit centers and park-and-ride facilities include:

FIGURE 6. 2025 DRAFT TRANSIT OPTIONS



- A combination transit center and park-and-ride facility at the intersection of the Union Pacific Railroad and Hunt Highway for both commuter bus and commuter rail patrons
- A combination transit center and park-and-ride facility at the intersection of the Union Pacific Railroad, the Copper Basin Railway, and Arizona Farms Road for commuter rail patrons
- A combination transit center and park-and-ride facility north of downtown Florence at the intersection of SR 79 and the Copper Basin Railway for patrons of commuter bus, commuter rail, and excursion rail services
- A transit center at Central Arizona College
- Park-and Ride facilities at the following locations: Coolidge Municipal Airport; The corner of Skousen Road and SR 287; The corner of Florence-Kelvin Highway and SR 79; and at Randolph Road, SR 87, and the Union Pacific

The timing of the extension of local service—e.g., the Cotton Express in Coolidge—to these areas will depend upon the rate of buildout of the various developments that comprise the new service areas. Expansion may also depend upon the degree of transit orientation of the subdivisions. Extending service sooner to areas that are more conducive to transit service, both with regard to the demographics of the particular development and the layout of the development's internal street network, will result in service that can be managed more efficiently and maintains a higher farebox recovery ratio.

While the demographic thresholds evaluated in the previous section will govern the timing for prioritizing and implementing the recommended services, the operation of many of these services may be contingent on necessary infrastructure improvements. For example, additional freeway capacity will greatly enhance the efficiency of the limited stop commuter bus services. A bus commuter experiencing peak hour traffic delays on Hunt Highway can put the time to productive use in ways that would be impractical or unsafe for a motorist to do, such as reading, making phone calls, or working on a laptop computer. However, the new freeways may include high-occupancy vehicle (HOV) lanes for the use of buses, vanpools, or carpools, making these alternative ways of commuting time-competitive with single-occupancy vehicles.

Significant improvements in the rail infrastructure such as lengthened sidings and sections of double track will be needed before regional or commuter rail service could be implemented on a regular or frequent basis.

RECOMMENDATION AND IMPLEMENTATION STRATEGY. This section presents a capital improvement program designed to address the transportation challenges faced in the City of Coolidge and the Town of Florence, with a plan for implementing the program in short-, mid-, and long-term phases. Working with the TAC and the Project Managers from each community, the consultant team developed cost estimates for the short-, mid-, and long-term transportation projects. Recommendations were presented to the Project Managers and the Technical Advisory Committee for review and comment.

Implementation Plan. A program to plan, coordinate, and implement a multimodal regional transportation plan was developed. In addition, long-range projects were identified and costs were estimated. High priority road corridors were also identified.

Challenges to Implementation. Implementing the multimodal transportation infrastructure within the region presents several major challenges including the following:

- Right-of-way needs and right-of-way preservation for roadways
- Approved development plans that did not incorporate major transportation facilities
- Ability to implement continuous and consistent facilities
- Lead time needed to construct facilities
- Cost of needed improvements and funding implications
- Prioritization of projects with phased development
- Implementation of multimodal projects

Implementation Strategies. In order to meet the major challenges, the following action plan presented in Table 7 has been developed to implement the study recommendations.

TABLE 7. IMPLEMENTATION ACTION PLAN

Implementation Strategy	Responsible Entities
Plan and Program Adoption	
Adopt the Coolidge-Florence Regional Transportation Plan	Coolidge City Council Florence Town Council
Adopt the recommended Street Functional Classification and Roadway and Access Design Guidelines	Coolidge City Council Florence Town Council
Program the recommended transportation improvements into the Capital Program	Public Works Departments, Coolidge and Florence Councils
Coordination	
Establish regional transportation advisory committee	Coolidge and Florence, CCAG, ADOT
Coordinate with ADOT on the Design Concept Study for the North-South Freeway Corridor	Coolidge and Florence, ADOT, CAAG
Coordinate with ADOT on the I-10 Design Concept Study in regard to potential traffic interchange locations and crossings of the one-mile streets.	Coolidge and Florence, ADOT, CAAG
Coordinate with jurisdiction, Pinal County, and ADOT on Transportation Studies	Coolidge and Florence, Pinal County, Casa Grande, Eloy
Coordinate with CAAG on the development of population projections	Coolidge and Florence, CAAG
Communicate/coordinate with other agencies planning regional road and public transportation improvements.	ADOT, MAG. CAAG, PAG, and Valley Metro
Land Use Planning	
Establish a process to coordinate city land use and transportation decisions on a regular basis	Coolidge and Florence, Pinal County, ADOT, CAAG
Implement Transit Oriented Design (TOD) overlays	Coolidge and Florence
Incorporate access management considerations in land use and site approval process	Coolidge and Florence

TABLE 7. IMPLEMENTATION ACTION PLAN (Continued)

Implementation Strategy	Responsible Entities
Road Implementation	
Implement the Street Functional Classifications and Roadway Design Guidelines	Coolidge and Florence
Construct roadway improvements	City Public Works, City Planning
Coordinate on developing and implementing consistent design and access criteria	Coolidge and Florence, Pinal County
Establish a Coordinated Driveway Permitting Process with Pinal County ADOT	Coolidge and Florence, Pinal County, ADOT
Public Transportation Implementation	
Establish a Transportation Coordinator (Florence)	
Implement the expansion of the Cotton Express service area	Coolidge and Florence, Cotton Express, Pinal County, CAAG, ADOT
Public Transportation Implementation (Continued)	
Conduct Coolidge-Florence Regional Transit Feasibility Study	Coolidge and Florence, Cotton Express, Pinal County, CAAG, ADOT
Establish a process to coordinate transit services with private and public agencies	Coolidge and Florence Pinal County, Pinal Rides, CAAG, ADOT
Proactively support Pinal Rides project.	Coolidge and Florence. Cotton Express, Pinal County, Pinal Rides CAAG, ADOT
Participate in the planning and implementation of future regional bus and rail services	Coolidge and Florence Pinal County, CAAG, ADOT, UPRR, CBRY
Funding	
Identify high priority funding strategies	Coolidge and Florence. Cotton Express, Pinal County, CAAG, ADOT
Coordinate to obtain funding and leverage funds for improvements	Coolidge and Florence. Cotton Express, Pinal County, CAAG, ADOT
Monitoring and Updating Plan	
Implement a process to monitor and update plan	Coolidge and Florence, CAAG, ADOT
Coordinate on a regional traffic count program	Coolidge and Florence, CAAG, ADOT

Current Capital Improvement Projects. The current road capital improvement projects for the City of Coolidge and the Town of Florence are presented in detail in Chapter 8 of the Final Report. The 10-year Pinal County Arterial Streets Improvements Program is also presented in Chapter 8.

Recommended Projects. Recommended projects were identified from the 2025 Functional Classification Map. The recommended projects for the City of Coolidge Planning area are shown in Table 8 and the recommended projects for the Town of Florence Planning area are shown in Table 9. Table 10 summarizes the costs estimates for road improvements by planning area.

TABLE 8. RECOMMENDED PROJECTS BY FUNCTIONAL CLASSIFICATION – COOLIDGE PLANNING AREA

Road Segment Name	From/To	Functional Class	Total Lanes	Length (miles)	Total Cost for Section	Priority	Responsibility
Attaway Rd	Bartlett Rd to Florence Planning Area	Major Arterial	6	4.85	$67,337,231	High	Coolidge
Bartlett Rd	Tweedy Rd to Clemans-Felix Rd	Major Arterial	6	8.08	$50,932,264	High	Coolidge
Christensen Rd	Steele Rd to SR-287	Major Arterial	6	8.64	$61,208,500		Coolidge
Coolidge Airport Rd	Kleck Rd to Bartlett Rd	Major Arterial	6	2.75	$20,562,659	High	Coolidge
Eleven Mile Corner Rd	SR-287 to Bartlett Rd	Major Arterial	6	4.66	$27,727,270		Coolidge
Kenilworth Rd	Attaway Rd to Clemans-Felix Rd	Major Arterial	6	3.00	$6,545,060	High	Coolidge
Kleck Rd	Overfield Rd to Wheeler Rd	Major Arterial	6	11.07	$67,267,141		Coolidge
Kleck Rd	Wheeler Rd to study area boundary	Major Arterial	6	9.39	$72,016,043		Coolidge
S. Main Road 1	Korsten Road to Bartlett Rd	Major Arterial	6	2.48	$20,356,144		Coolidge
Martin Rd	Tweedy Rd to Clemans-Felix Rd	Major Arterial	6	7.97	$57,640,558		Coolidge
Mc Cartney Rd	Overfield Rd to Signal Peak Rd	Major Arterial	6	3.50	$22,225,203	High	Coolidge
Signal Peak Rd	Cottonwood Ln to SR-87	Major Arterial	6	8.10	$52,395,469	High	Coolidge
Skousen Rd	Bartlett Rd to SR-87	Major Arterial	6	4.00	$23,800,231		Coolidge
Vah Ki Inn Rd	Skousen Rd to Clemans Rd	Major Arterial	6	5.98	$44,006,049		Coolidge
Wheeler Rd	Kleck Rd to Bartlett Rd	Major Arterial	6	2.63	$17,048,652	High	Coolidge
Woodruff Rd	Overfield Rd to Tweedy Rd	Major Arterial	6	4.06	$26,957,235		Coolidge
		Subtotal		**89.18**	**$638,025,708**		
Christensen-Sierra Vista Ext 1	SR-287 to Bonnybrook Rd	Minor Arterial	4	1.92	$13,072,614		Coolidge
Coolidge Ave	Skousen Rd to Attaway Rd	Minor Arterial	4	4.97	$24,986,194		Coolidge
Curry Rd	Cottonwood Ln to Woodruff Rd	Minor Arterial	4	4.02	$21,350,161		Coolidge
Fast Track Rd	Steele Rd to Kleck Rd	Minor Arterial	4	1.99	$10,004,532		Coolidge
Kenilworth Rd	Macrae Rd to Skousen Rd	Minor Arterial	4	1.00	$5,027,403		Coolidge
Kenworthy Rd	Martin Rd to Vah Ki Inn Rd	Minor Arterial	4	2.00	$10,054,806		Coolidge
La Palma Rd	SR-287 to Bartlett Rd	Minor Arterial	4	4.46	$22,422,218		Coolidge
Macrae Rd	Martin Rd to Kenilworth Rd	Minor Arterial	4	1.01	$5,077,677		Coolidge
Randolph Rd	Overfield Rd to Wheeler Rd	Minor Arterial	4	11	$57,732,257		Coolidge
Storey Rd	Curry Rd to SR-87	Minor Arterial	4	5.02	$28,657,564		Coolidge
Toltec Buttes Rd	Cottonwood Ln to Woodruff Rd	Minor Arterial	4	4.03	$21,400,435		Coolidge
Tweedy Rd	SR-287 to Woodruff Rd	Minor Arterial	4	5.25	$26,393,867		Coolidge
		Subtotal		**46.70**	**$246,179,728**		
Main St (Coolidge)1	Kenilworth Rd to Vah Ki Inn Rd	Major Collector	2	1.00	$3,666,776		Coolidge
Northern Ave	Kenilworth Rd to Main St (Coolidge)1	Major Collector	2	2.28	$8,360,250		Coolidge
Val Vista Rd	Signal Peak Rd to end of Val Vista Rd	Major Collector	4	1.00	$3,666,776		Coolidge
		Subtotal		**4.8**	**$15,693,802**		
		Totals		**140.16**	**$899,899,238**		

TABLE 9. RECOMMENDED PROJECTS BY FUNCTIONAL CLASSIFICATION – FLORENCE PLANNING AREA

Road Segment Name	From/ To	Functional Class	Total Lanes	Length (miles)	Total Cost for Section	Priority	Responsibility
Arizona Farms Rd	Hunt Hwy to SR-79	Major Arterial	6	9.55	$64,568,053	High	Florence
Attaway Rd	Arizona Farms Rd to Bella Vista Rd	Major Arterial	6	4.38	$26,061,253	High	Florence
Attaway Rd	Hunt Hwy to Coolidge Planning Area	Major Arterial	6	2.15	$30,877,900	High	Florence
Attaway Rd	Hunt Hwy to Clemans-Felix Rd	Major Arterial	6	1.28	$8,233,972	High	Florence
Bartlett Rd	Clemans-Felix Rd to Coolidge Airport Rd	Major Arterial	6	1.95	$12,291,821		
Bella Vista Rd	Hunt Hwy to SR-79	Major Arterial	6	12.08	$76,166,699		
Cactus Forest Rd	Martin Rd to Biznaga St	Major Arterial	6	7.63	$53,798,942		
Cactus Forest Rd	Coolidge Airport Rd/Hiscox Ln to Cactus Forest Rd	Major Arterial	6	1.72	$15,924,100		
Clemans Rd	Bartlett Rd to SR-287	Major Arterial	4	4.04	$25,800,975		
Clemans-Felix Rd	Attaway Rd (RoadNum 39) to Attaway Rd (RoadNum 5)	Major Arterial	6	7.74	$50,253,448	High	Florence
Coolidge Airport Rd	Bartlett Rd to Kenilworth Rd	Major Arterial	6	2.02	$18,364,117		
Cooper Rd	Hiller Rd Ext1 to Bella Vista Rd	Major Arterial	6	5.45	$33,827,815		
Florence-Kelvin Hwy	SR-79B to Biznaga St	Major Arterial	6	6.10	$40,495,353		
Gantzel Rd	Hunt Hwy to Bella Vista Rd	Major Arterial	6	1.28	$7,616,074		
Heritage Rd	Hiller Rd to SR-79	Major Arterial	4	2.88	$17,026,438		
Hiller Rd	Poston Butte-Cooper Rd1 to SR-79	Major Arterial	6	2.57	$21,636,649		
Hiscox Ln	Kenilworth Rd to SR-287	Major Arterial	6	2.55	$22,172,648		
Hunt Hwy	SR-79 to Bella Vista Rd	Major Arterial	6	15.70	$100,415,909	High	Pinal County, Florence
Kenilworth Rd	Clemans-Felix to Coolidge Airport Rd	Major Arterial	6	1.98	$12,705,116	High	Pinal County, Florence
Martin Rd	Clemans-Felix Rd to Cactus Forest Rd	Major Arterial	6	2.92	$20,026,035	High	Pinal County, Florence
Merrill Ranch Parkway	Clemans-Felix Rd to Desert Color Pkwy	Major Arterial	6	1.48	$9,810,220		
N. Main Road1	Hiller Rd to Bella Vista Rd	Major Arterial	6	5.06	$31,307,293		
Plant Rd	Hwy Hwy to Bartlett Rd	Major Arterial	6	7.47	$74,291,932		
S. Main Road	Korsten to Vah Ki Inn rd	Major Arterial	6	2.48	$20,356,144		
Vah Ki Inn Rd	Clemans Rd to SR-79	Major Arterial	6	5.48	$40,326,613		
		Subtotal		**117.94**	**$834,355,518**		

TABLE 9. RECOMMEDED PROJECTS BY FUNCTIONAL CLASSIFICATION – FLORENCE PLANNING AREA (Continued)

Road Segment Name	From/ To	Functional Class	Total Lanes	Length (miles)	Total Cost for Section	Priority	Responsibility
Adamsville Rd	SR-287 to Main St	Minor Arterial	4	3.94	$23,701,969		
Attaway Rd	Hiller Rd to Quail Run Ln	Minor Arterial	4	1.84	$9,825,107	High	Florence
Bartlett Rd	SR-79 to Biznaga St	Minor Arterial	4	3.00	$17,362,210		
Biznaga St	Bartlett Rd to Florence-Kelvin Hwy	Minor Arterial	4	3.83	$29,514,954		
Bonnybrook Rd	Hunt Hwy to Walker Butter Pkwy	Minor Arterial	4	1.05	$5,278,773		
Butte Ave	Main St to SR-79	Minor Arterial	4	0.49	$2,463,428		
Butte Rd	SR-79 to Old Florence-Kelvin Hwy	Minor Arterial	4	1.49	$8,630,831		
Carrell Lane	Vah Ki Inn Rd to SR-79	Minor Arterial	4	0.75	$3,770,552		
Christensen-Sierra Vista Ext	SR-287 to Bonnybrook Rd	Minor Arterial	4	1.92	$13,072,614		
Clemans-Ranchview Ext	SR-287 to SR-79	Minor Arterial	4	6.06	$31,606,063		
Desert Color Pkwy	Hunt Hwy to Clemans-Felix Rd	Minor Arterial	4	3.76	$20,043,036		
Diffen Rd	Bartlett Rd to Florence-Kelvin Hwy	Minor Arterial	4	3.98	$29,129,065		
Diffen Rd	Florence-Kelvin Hwy to Old Florence-Kelvin Hwy	Minor Arterial	4	0.87	$7,793,841		
Dogwood-Mayfield Rd	Vah Ki Inn Rd to Quail Run Rd	Minor Arterial	4	2.98	$19,541,662		
Mayfield Rd		Minor Arterial	4				
E. Canal Rd	Valley Farms Rd to Plant Rd	Minor Arterial	4	1.95	$9,803,436		
Florence Heights Dr	Main St to SR-79	Minor Arterial	4	0.56	$2,815,346		
Fulson Rd	Bartlett Rd to Vah Ki Inn Rd	Minor Arterial	4	3.00	$24,202,210		
Herseth Rd	Judd Rd to Bella Vista Rd	Minor Arterial	4	1.02	$5,127,951		
Hiscox Ln	SR-287 to Adamsville Rd	Minor Arterial	4	0.52	$3,754,250		
Judd Loop East	Hunt Hwy to Judd Rd	Minor Arterial	4	1.99	$10,004,532		
Judd Rd	Judd Rd to SR-79	Minor Arterial	4	11.03	$57,090,257		
Judd Rd	Hunt Hwy to Judd Rd	Minor Arterial	6	0.37	$1,860,139		
Merrill Ranch Parkway	Hunt Hwy to Clemans-Felix Rd	Minor Arterial	4	2.08	$13,787,336		
N. Sierra Vista Dr	Judd Rd to Bella Vista Rd	Minor Arterial	4	1.02	$5,127,951		
North Felix Loop Road	Judd Rd to Bella Vista Rd	Minor Arterial	4	1.00	$6,665,403	High	Florence
Old Florence-Kelvin Hwy	Butte Rd to Old Florence-Kelvin Hwy	Minor Arterial	2	0.06	$3,079,644		
Old Florence-Kelvin Hwy	Old Florence-Kelvin Hwy to Florence-Kelvin Hwy	Minor Arterial	4	3.73	$25,448,214		

TABLE 9. RECOMMEDED PROJECTS BY FUNCTIONAL CLASSIFICATION – FLORENCE PLANNING AREA (Continued)

Road Segment Name	From/ To	Functional Class	Total Lanes	Length (miles)	Total Cost for Section	Priority	Responsibility
Palmer Rd	Christensen-Sierra Vista Ext to Attaway Rd (RoadNum 39)	Minor Arterial	4	2.00	$12,334,806		
Pinebrook Ln	Plant Rd to Biznaga St	Minor Arterial	4	7.95	$47,305,856		
Poston Butte Pkwy	(loop) Desert Color Pkwy to Desert Color Pkwy	Minor Arterial	4	3.10	$17,864,950		
Poston Butte-Cooper Rd	Hiller Rd to Poston Butte Pkwy	Minor Arterial	4	0.72	$6,397,730		
Quail Run Ln	W. Hiller Rd to Arizona Farms Rd	Minor Arterial	4	1.97	$9,903,984		
Quail Run Rd	Judd Rd to Bella Vista Rd	Minor Arterial	4	1.02	$5,127,951		
Quail Run Rd	Pinebrook Ln to Old Florence-Kelvin Hwy	Minor Arterial	4	3.59	$24,888,378		
Ranchview Rd	Valley Farms Rd to Hunt Hwy	Minor Arterial	4	1.76	$8,848,230		
Reed Rd	Bartlett Rd to Cactus Forest Rd	Minor Arterial	4	4.10	$33,152,353		
S. Dogwood Rd	Bartlett Rd to Pinebrook Ln	Minor Arterial	4	1.92	$14,212,614		
S. Main Road1	Korsten Rd to Vah Ki Inn Rd	Minor Arterial	4	3.04	$25,543,306		
SR-79B	CAP canal to SR-287	Minor Arterial	2	1.26	$6,334,528		
SR-79B	SR-79B to SR-79B	Minor Arterial	4	0.29	$2,597,947		
Vah Ki Inn Rd	SR-79 to Biznaga St	Minor Arterial	4	5.45	$35,379,348		
Valley Farms Rd	Vah Ki Inn Rd to Hunt Hwy	Minor Arterial	4	2.96	$31,381,114		
W. Hiller Rd	Hunt Hwy to Attaway Rd	Minor Arterial	4	1.48	$8,580,557		
Walker Butte Pkwy	Walker Butte Pkwy to Hunt Hwy	Minor Arterial	4	2.81	$17,547,003		
Walker Butte Pkwy	Christensen-Sierra Vista Ext to Bonnybrook Rd	Minor Arterial	4	2.56	$15,150,152		
Wildwood Rd	Bartlett Rd to Florence-Kelvin Hwy	Minor Arterial	4	4.12	$32,112,901		
Yeager Rd	Judd Rd to Bella Vista Rd	Minor Arterial	4	1.01	$5,077,677		
		Subtotal		**117.40**	**$750,242,160**		

TABLE 9. RECOMMEDED PROJECTS BY FUNCTIONAL CLASSIFICATION – FLORENCE PLANNING AREA

Road Segment Name	From/ To	Functional Class	Total Lanes	Length (miles)	Total Cost for Section	Priority	Responsibility
Ruggles St	Main St to SR-79	Major Collector	4	0.48	$1,760,053		
Attaway Rd	Franklin to Hiller Rd	Major Collector	3	1.81	$9,664,915	High	Florence
Butte Ave	Plant Rd to Main St	Major Collector	3	1.00	$5,346,776		
Centennial Park	SR-287 to Butte Ave	Major Collector	3	0.96	$5,254,105		
Diversion Dam Rd	SR-79 to end of Diversion Dam Rd	Major Collector	3	2.35	$8,616,924		
Franklin	Bonnybrook Rd to Hunt Hwy	Major Collector	3	1.49	$7,743,497		
Main St	SR-287 to Butte Rd	Major Collector	4	0.64	$2,346,737		
Main St	Ruggles St to Clemans-Ranchview Ext	Major Collector	4	0.66	$2,420,072		
Main St	Butte Rd to Ruggles St	Major Collector	2	0.32	$1,173,368		
North Felix Loop Rd Loop Ext	(loop) Judd Rd to Judd Rd	Major Collector	3	2.77	$10,156,970	High	Florence
Price Rd	SR-79 to end of Price Rd	Major Collector	3	1.58	$8,247,506		
		Subtotal		**14.06**	**$62,730,923**		
Bowling Rd	Butte Rd to Diversion Dam Rd	Minor Collector	2	0.50	$2,392,096		
Maricopa Blvd	end of Maricopa Blvd to SR-79	Minor Collector	2	0.07	$192,933		
Ranchview Rd1	Walker Butte Pkwy to Hunt Hwy	Minor Collector	2	1.49	$4,946,727		
Ranchview-Bowling Rd1	Diversion Dam Rd to SR-79	Minor Collector	2	1.06	$3,935,564		
		Subtotal		**3.12**	**$11,467,320**		
Frontage Road Southbound	Judd Rd to Arizona Farms Rd	Frontage Road	2	2.00	$5,512,383		
Frontage Road Southbound	Arizona Farms Rd to Heritage Rd	Frontage Road	2	0.99	$2,728,630		
Frontage Road Southbound	Hiller Rd to Hunt Hwy	Frontage Road	2	2.34	$6,449,489		
Frontage Road Southbound	Heritage Rd to Hiller Rd	Frontage Road	2	1.05	$2,894,001		
Frontage Road Northbound	Judd Rd to Arizona Farms Rd	Frontage Road	2	2.00	$5,512,383		
Frontage Road Northbound	Arizona Farms Rd to Heritage Rd	Frontage Road	2	0.99	$2,728,630		
Frontage Road Northbound	Heritage Rd to Hiller Rd	Frontage Road	2	1.05	$2,894,001		
Frontage Road Northbound	Hiller Rd to Hunt Hwy	Frontage Road	2	2.37	$6,532,174		
Frontage Road Northbound	Vah Ki Inn Rd to Clemans-Ranchview	Frontage Road	2	2.78	$7,662,213		
Frontage Road Southbound	Vah Ki Inn Rd to Clemans-Ranchview	Frontage Road	2	2.77	$7,634,651		
		Subtotal		**18.34**	**$50,548,555**		
		Totals		**270.86**	**$1,709,344,476**		

TABLE 10. SUMMARY OF COST ESTIMATES

Functional Class	Coolidge Planning Area		Florence Planning Area		Total Cost
	Length (miles)	Cost	Length (miles)	Cost	
Major Arterial	89.18	$638,025,708	117.94	$832,054,397	$1,472,381,226
Minor Arterial	46.70	$246,179,728	117.40	$750,242,160	$996,421,888
Major Collector	4.28	$15,693,802	14.06	$62,730,923	$78,424,725
Minor Collector	0	$0	3.12	$11,467,320	$11,467,320
Frontage	0	$0	18.34	$50,548,555	$50,548,555
Total	**140.16**	**$899,899,238**	**270.86**	**$1,709,344,476**	**$2,609,243,714**

The projects and estimated costs in Tables 8 and 9 represent the ultimate project cross-sections. However, the normal evolution of the arterial streets would probably be as follows:

1. A portion of the 2-lane half arterial street would be built by the developer on one side.
2. The other 2-lane half arterial street would be constructed at some later date by the developer on the other side.
3. The arterial street would be expanded to 6 lanes with a center lane and median by the municipality when the traffic volumes warrant the expansion.

Prioritization of Projects. Priorities were assigned to potential projects as low, medium, and high priority. The following criteria was used in identify priorities for projects.

- Potential to close gaps and improve continuity and connectivity to activity centers
- Potential to relieve current congestion
- Potential to relieve future congestion
- Potential to serve current development or impending growth
- Potential to improve rail crossing safety
- Proximity to future interchanges
- Included in TIP/CIP
- Connectivity to facilities of adjacent communities

FUNDING AND REVENUE ESTIMATES. A number of multimodal revenue sources are available to the City of Coolidge and the Town of Florence. A number of funding mechanisms exist that could be used to fund multimodal improvements for the municipalities. Key federal, state, regional, and local sources are shown in Table 11.

Funding options include both traditional and innovative sources. Traditional sources are the Arizona Highways User Revenue Fund (HURF); the Local Transportation Assistance Fund (LTAF); Federal-Aid Funds (Surface Transportation, Bridge, Safety, and Transportation Enhancement Funds); and local general funds, such as general obligation bonds and revenue bonds. Alternative sources of funding include special assessment districts, developer dedications, and exactions such as impact fees.

TABLE 11. MATRIX OF KEY MULTIMODAL FUNDING SOURCES

Fund Name	Description	Eligible Uses	Application Process
Federal			
STP	Federal funds, administered by FHWA and ADOT	Variety of capital projects including highways, bridges, and enhancement projects	Programmed and distributed through CAAG and ADOT District
High Risk Rural Roads	Federal funds, administered by FHWA and ADOT	Correct safety problems on roadways classified as rural major collectors, rural minor collectors and rural local roads	Programmed through ADOT
Safe Routes to School Program	Federal funds, administered by FHWA and ADOT	sidewalk, traffic calming and speed reduction improvements, pedestrian and bicycle crossing improvements, traffic diversion improvements near schools	Programmed through ADOT
State			
HURF	State funds, derived from fuel tax and VLT, administered by ADOT	Nearly any capital project related to roadway improvements	Funds allocated to jurisdiction as proportion of population
LTAF	State funds derived from lottery sales	General transportation improvements	Funds allocated to jurisdiction as proportion of population
County			
Pinal County Transportation Excise Tax	½ cent sales tax dedicated to road improvements within Pinal County	1. Highway and street purposes for county, city or town roads, streets, and bridges. 2. Principal and interest on highway and street bonds. 3. Multi-modal transportation systems. 4. Regional transportation studies. 5. Cooperative transportation projects and studies between the federal government and its agencies, the State government and its agencies, and the incorporated cities and towns within the County.	Funds allocated to jurisdiction as proportion of population
Impact Fees*	Fee imposed by local jurisdiction on development on per unit basis	Used to fund a variety of infrastructure needs including transportation	Locally administered
Development Stipulations*	Requirements that developers dedicate appropriate ROW and build streets adjacent to project	Benefits are derived by offsetting cost of acquiring ROW and building infrastructure	Locally administered

*If Enacted

Potential Sources of Additional Funding. Other potential sources of funding include:

- Economic Strength Projects Fund
- Governor's Office of Highway Safety
- Community Development Block Grants
- Pinal County Excise Tax
- Traffic impact fees, development impact fees, dedication of right-of-way, and/or construction of facilities in-lieu by area developers

These potential sources are summarized in the Final Report. Revenue estimates from likely funding sources are described in the Final Report.